commissioners, a motion was proposed and seconded "That the rate be confirmed."

The resolution was put and unanimously carried. A vote of thanks was passed to the Speaker of the House of Commons for the accommodation he had afforded for the meetings of the court for the last seven months.

New Books.

Principles of Geometry, Mensuration, Trigonometry, Land-Surveying, and Levelling. By THOS. TATE, Mathematical Master of the National Society's Training College, Battersea. Longman, Brown, and Co., London.

WE have already had occasion to speak with commendation of Mr. Tate's labours in simplifying arithmetical and mathematical studies. The present little work is intended by the author "to supply teachers and practical men with a simple and concise, yet comprehensive system of theoretical and practical mathematics, embracing geometry, trigonometry, mensuration, surveying, and levelling,"—and appears to us, to a very considerable extent, to answer the intention. We can conscientiously recommend it to those who wish to acquire the description of knowledge of which it treats,—and of the importance of this knowledge, and the necessity for acquiring it, we cannot speak too strongly.

The chapter on the principles of estimating the value of artificers' work will be found very useful. The author remarks with truth:—

"The custom of estimating and contracting for work by the 'lump' is very little better than a modified form of gambling, by which the contractor may either make himself a fortune, to the injury of his employer, or render himself penniless, with all the moral evils resulting from hopeless and irretrievable pecuniary embarrassment. Teachers of elementary schools and mechanics' institutions would confer a great benefit on society, by teaching the simple and fundamental principles of estimation, rather than waste the time of their pupils in giving 'sums' which are only calculated to amuse the curious, without conveying any satisfactory information to the man who is engaged in the business of life. It is true that some of these 'sums' may exercise the mind, but it is an important fact, which should never be lost sight of, that those investigations which have the greatest practical bearing invariably form the most healthful and instructive exercise to the intellectual powers."

The Treasury of Natural History; or, a Popular Dictionary of Animated Nature. By SAMUEL MAUNDER, author of "The Treasury of Knowledge." Longman, Brown, and Co. London, 1848.

BY 800 closely-printed pages, in double columns, and 900 wood cuts, Mr. Maunder has given in this cheap "Treasury," an amount of information, "in which the zoological characteristics that distinguish the different classes, genera, and species, are combined, with a variety of interesting information illustrative of the habits, instincts, and general economy of the animal kingdom," that cannot elsewhere be obtained for double the cost.

The whole of the articles are printed in alphabetical order, so that the name of the animal being known, its character and habits can be instantly ascertained, while those who wish to study this branch of natural history according to system, will find an introduction containing Cuvier's arrangement, with alterations to meet the present advanced state of the science, and references to the different genera described in the body of the work. It has all the advantages of a dictionary without its dryness, for it is interspersed with characteristic anecdotes and reflections, and is as pleasant for desultory reading as it is useful for precise inquiry.

The value of the book, which is really a monument of industry, will be increased to a large class of readers, if, in succeeding editions, the names be *accented*.

Rambles about Bath and its Neighbourhood. By JAS. TUNSTALL, M.D. Simpkin and Marshall, London; M. Pocock, Bath. Second Edition.

THIS is a very pleasant little book about an interesting neighbourhood, and is illustrated by a number of woodcuts. As it will doubtless become the standard local guide, it is desirable that the architectural descriptions should be a little more full and precise. A map of the environs of the city accompanies the work, and greatly increases its value.

Dr. Tunstall has worked *con amore*, and has thrown into his book much vigour and spirit.

Miscellanea.

THE SMOKE QUESTION.—A writer in the *Kentish Mercury* refers to an article on the smoke nuisance, which appeared in THE BUILDER a short time since. Speaking of the argand furnaces, he says—"It is a curious circumstance, which chemists can all well understand, that supposing we lived and moved in an atmosphere of coal gas, instead of one of oxygen and nitrogen, as at present, our gas manufactories would have to use not coal but manganese, or some other product yielding oxygen. Imagine two gasometers, one filled with coal gas, and having a gas chandelier hung from the roof, inside, and this connected by a flexible pipe with the second gasometer, filled with atmospheric air or oxygen; it is evident that the air or gas might be pressed from this second gasometer through the flexible tube, down the tubes of the chandelier, into the coal gas occupying the first gasometer. If flame, or the electric spark, were then immediately applied to the jets, on the instant of their so issuing from the chandelier, combustion would proceed as at present; only apparently atmospheric air would seem to be a combustible! This is just what is taking place in the argand furnaces; the air, so to speak, is showered into the volumes of coal gas, in innumerable small jets, ensuring a complete admixture, and rendering combustion so perfect, as entirely to avoid those dense clouds of smoke which disgrace the funnels of every steam-boat on the river, and all the large works in and about our otherwise favoured town."

THE COLOSSEUM.—We alluded some time ago to the magnificent panorama of "Paris" at this establishment, but scarcely said so much as its merits warrant. The striking events which have occurred in that city have been so minutely described by the daily papers, that the names of the streets and buildings of the once "gay" capital are become as familiar to our readers as those of our own city, and this renders a visit to the colossal panorama, where we at once recognise the localities of these scenes, doubly interesting. They are so vividly brought before the spectator, that he may fancy himself amongst them. The correctness of the picture is perfect. It is to be hoped that the exertions of the proprietors in producing such a subject of interest at the time, have been amply repaid by crowds of visiters. The extraordinary panorama of "London by Night," which was formerly exhibited there, is about to be removed to Liverpool, and we believe eventually to New York. It was displaced earlier than was intended, the exciting events in Paris having induced the proprietors to bring forward the present panorama of "Paris by Night." Mr. Bradwell is now engaged in preparing in their extensive new building in Albany-street, an entirely novel exhibition, to be called the "Cyclorama," in which a colossal moving panorama of great historical interest will be exhibited.

CHINESE CARVING.—The means by which the concentric balls which come from China can be carved one within the other, have long been matter of dispute. No join is to be discovered, but a recent traveller states positively that each ball is constructed of two pieces, the edges of which are so finely scraped down, that the edge of one hemisphere is made to overlap its counterpart with the greatest nicety. Thus one ball is easily inclosed within another. The joinings are then united by a peculiarly strong cement, aided by the employment of steam and pressure. He says that any one who wishes to make the expensive trial will soon ascertain the fact by applying a very powerful heat to one of these balls, which will open at the joints in due time.

VISION OF OBJECTS DURING RAPID TRANSIT.—At the meeting of the British Association, Sir David Brewster mentioned some curious facts relative to the vision of objects during rapid travelling. On looking out of the window of a railway carriage, for instance, if the eye be fixed on a row of stones or of palings, the image seems confused, and to be rapidly moving away; but if the axes of the eye be suddenly turned to some nearer spot, then the stones or palings are for an instant distinctly seen stationary. Sir David Brewster said he could not yet account for the phenomenon. Dr. Whewell and other members mentioned similar instances of optical illusions, with a view to explain the cause, but Sir David was of opinion that the cases mentioned were not parallel.—Of course it is merely by the rapidity with which one changing impression succeeds another in the eye that confusion of all appears in the endeavour to realize any one of them separately or distinctly. But is it not merely because, in the act of turning the focus of forcible impression from the more distant towards the nearer object, the impression of the last direct glance at the more distant is vanishing quietly without a repetition of the confusing succession of impressions on the same points, that the object engaging the attention is for an instant distinctly seen? And, moreover, is it not more particularly by sudden *comparison* with the more rapidly shifting *relationships* of position in which the eye stands *to nearer than to more distant and more relatively fixed* points or objects, that the more distant do thus appear for an instant to be altogether *fixed*, the more so, of course, when *the attention* is fixed upon such objects, *distinctly seen*, or realised by the mind, in the midst of a field of confusion? We are convinced, however, that the *re-member*-ance of visual composite impressions *from within*, through the optic apparatus (*as in optical illusions*, which we some years since discovered the possibility of evoking at will, in susceptible persons, by the mere exercise of their own fixed attention, through the eye, upon the centre of a clear external surface, such as that of polished metal, or even a mirror, and especially in the gloom of the evening), has much more to do with such phenomena, and, indeed, with vision in general, than is ordinarily conceived.

COMPRESSED-AIR LOCOMOTION ON COMMON ROADS.—Another exhibition of Baron Von Rathen's locomotive took place on Thursday week, on the road between Putney and Wandsworth. This trial was for testing the apparatus for working the air expansively, which, however, was unfortunately leaky, and much of the power was lost. The carriage weighing 3 tons, and carrying 25 to 30 persons, is said to have started in good style, and kept pace with former experiments, as to time and distance. The patentee considers he has now solved the problem of the practicability of employing compressed-air in locomotion, and regulating it as to distance, speed, load, nature of road, &c. He is prepared, says the *Mining Journal*, to shew to mathematical demonstration, that he can embody sufficient power in this model air-carriage to carry 4½ tons, including carriage, 10 miles in one hour on common roads, or a train of 45 tons in the same time the same distance on a railway; but if carried out on a large scale on the latter, he contends that the system would effect a saving of 75 per cent. over the steam locomotive.

PROJECTING SHOP-FRONTS.—Last week, at Bow-street, Mr. Deane, a shopkeeper residing at 316, High Holborn, was summoned for having erected a shop-front which extended beyond the distance allowed by the 57th George III., sec. 72.—Mr. Parry, for the commissioners of pavements, stated the facts, and called Mr. Robert Southgate, the surveyor of pavements, who stated that one end of the shop front extended 11½ inches beyond the house, and the other end was 13½ inches. It was a new front, and he had given notice to Mr. Deane to alter it, but the notice had not been attended to.—By Mr. Bodkin, on behalf of Mr. Deane.—He gave notice that the front projected too far before it was finished. The old front had extended the same distance. In fact, the new one occupied exactly the same position. It was not the practice of the commissioners to interfere with old fronts which

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